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Myer

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[54] **FLUID FLOW MOTION REDUCTION SYSTEM**

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[58] **Field of Search** ..... 74/471 XY, 110, 1 R; 33/491, 23.01, 23.03

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[57] **ABSTRACT**

A fluid flow motion reduction apparatus capable of a very small and reduced movement in one and two dimensions. The motion reduction apparatus applies the principles of Couette flow to a set of stacked plates, the plates being separated from one another by a Newtonian fluid. In the preferred embodiment, a top plate moves causing the fluid upon which it resides to flow. This fluid presses against an interleaved driven plate, which imparts a force on a lower fluid of greater viscosity than the top plate fluid. The resulting linear displacement of the driven plate is substantially reduced when compared to the distance traversed by the top plate, thus resulting in substantial motion reduction.

An alternative embodiment discloses a joystick-driven, two dimensional motion reduction apparatus having a joystick with a double ball bearing assembly at one end seated in a conical aperture of the top plate. This embodiment is capable of both X and Y axis motion. The double ball bearing assembly is seated in a ball socket formed by the plates and may be locked into place by an adjustable screw.

8 Claims, 3 Drawing Sheets